

COMMENTARY

Policy Implications of the Society for Healthcare Epidemiology of America's Research Plan for Reducing Healthcare-Associated Infections

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(See the position paper by the Research Committee of SHEA, on pages 118–123.)

The country is currently in the midst of a healthcare debate about all aspects of healthcare spending; \$2.4 trillion is spent annually on health care, representing 16% of the gross national product. The focus has been on value-based competition (paying for performance and not quantity of care) and on patient safety and the quality of medical care. Two seminal publications from the Institute of Medicine were early catalysts for the creation of this movement to reform healthcare spending: *To Err is Human: Building a Safer Health System*,¹ published in 2000, and *Crossing the Quality Chasm: A New Health System for the 21st Century*,² published in 2001. Infectious diseases physicians and healthcare epidemiologists were the first to point out that healthcare-associated infections (HAIs) were major contributors to adverse events associated with the delivery of health care.^{3,4}

The focus on HAIs is in part because many of these infections are preventable and can be measured using standard and well-validated surveillance systems and definitions.⁵ Public health officials, government officials, and consumer advocates have recognized the impact of HAIs, as witnessed by the increased emphasis on legislation for the public reporting of HAIs.^{6,7} Furthermore, many HAIs are increasingly difficult to treat because of their consistent association with multi-drug-resistant organisms (MDROs).⁸

The Centers for Disease and Prevention and the Healthcare Infection Control Practices Advisory Committee have provided guidance on infection control and prevention.^{8,9} Among national leaders in this arena, SHEA has been an advocate for active surveillance and prevention programs.¹⁰ *A Compendium of Strategies to Prevent Healthcare-Associated Infections in Acute Care Hospitals*,¹¹ published by SHEA, represents a compilation of evidence-based practices and expert consensus opinion on strategies to address the prevention of HAIs

and the transmission of MDROs. Despite this exhaustive review of the current evidence, it has been increasingly clear that there are significant gaps in knowledge that require a broad and multifaceted research agenda to bridge.

One timely example is the current debate on respiratory protection for healthcare workers against novel H1N1 influenza A virus in the workplace. The Institute of Medicine Committee, which is charged with studying this issue, reported on a recommendation for supporting the use of fit-tested N95 respirators and also increasing research on influenza transmission and personal respiratory protection.¹²

The article by the Research Committee of SHEA published in this issue of the journal outlines a comprehensive national research agenda on HAIs, addressing 3 major areas of research: pathogenesis, epidemiology, and infection prevention strategies.¹³ A fourth area of proposed research is in improving the design of healthcare epidemiology studies. Pathogenesis and host defense mechanisms have been the subject of much funding, provided by the National Institute of Allergy and Infectious Diseases of the National Institutes of Health (NIH). Funding for the other areas of the proposed research agenda has been extremely limited, with clinical investigators in healthcare epidemiology and prevention implementation research receiving relatively less funding than colleagues in basic science disciplines. From a policy perspective, enhancing the funding for HAI research is at the core of the SHEA research agenda.

The recent emphasis by the NIH on translational research is promising, because it recognizes the need to effectively implement, diffuse, and disseminate medical discoveries into clinical practice.¹⁴⁻¹⁶ The later phases of translational research (ie, phase 3 translation research and phase 4 translation research) focus on moving evidence-based practices into health

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practice and ultimately evaluating real-world health outcomes.¹⁶ Research on understanding and reducing HAIs generally falls into these phases. It is imperative that the NIH align more funding support with these latter translational phases.

Another evolving focus of research that significantly impacts HAI research is called comparative effectiveness research. Simply put, this research compares the relative strengths and weaknesses of medical therapies or interventions.^{17,18} Recently, the American Recovery and Reinvestment Act of 2009 allocated \$1.1 billion to comparative effectiveness research (\$300 million for the Agency for Healthcare Research and Quality; \$400 million for the NIH; and \$400 million for the Office of the Secretary of Health and Human Services [HHS]).¹⁹ In this context, the Agency for Healthcare Research and Quality has announced its intent to “support HHS strategic plan goal 1: improve the safety, quality, affordability and accessibility of health care.”²⁰ In this same document, they indicate that comparative effectiveness research “may also address public health or systems interventions that affect health outcomes.”²⁰ Much of the work on understanding the most effective prevention strategies for HAIs entails comparing intervention approaches, whether individually or as “bundles.” Thus, HAI research appears to clearly meet the definition of comparative effectiveness research.

Notably, 2 areas of infection control were cited in the tier-1 national priorities for comparative effectiveness research: (1) compare the effectiveness of various screening, prophylaxis, and treatment interventions for the eradication of methicillin-resistant *Staphylococcus aureus* colonization or infection in communities, institutions, and hospitals; and (2) compare the effectiveness of strategies for reducing HAIs, including catheter-associated bloodstream infection, ventilator-associated pneumonia, and surgical site infection among children and adults.¹⁷ It is our hope that HAI research will be seriously considered as the requests for proposals and priority areas are being developed and refined by both the NIH and the Agency for Healthcare Research and Quality.

Beyond funding, the SHEA research committee calls for the creation of a national research agenda. SHEA can combine efforts with other organizations such as the Centers for Disease and Prevention’s Division of Healthcare Promotion and Quality, which has a strong agenda for the prevention of HAIs, and the Association of Professionals in Infection Control’s Scientific Research Council to help define the national agenda.

Another area of focus of the SHEA research agenda is the creation of a national research consortium. The Centers for Disease and Prevention–funded Prevention Epicenters may provide a significant core group of HAI researchers to address many of the specific research topics²¹ and could serve as the model for a formal research network. SHEA could facilitate a more informal but functional national infection prevention network that would allow accrual of significant numbers of patients and engage a variety of experienced healthcare epi-

demologists in the design and conduct of these critical studies. It is critically important that the primary investigators who receive funding to conduct research on the prevention of HAIs are the experienced individuals involved daily in the struggle to control HAIs (ie, the hospital epidemiologists and infection control professionals).

We have a mandate from scientific, public, and legislative interests to seriously address the problem of HAIs and associated MDROs. The SHEA Research Committee has articulated the problem and recommended viable solutions. It is imperative that appropriate agencies and legislators address the issue of the limited federal funding available to do this work, and that healthcare epidemiologists and infection preventionists join forces and combine efforts to design and conduct this important research.

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